BRITISH COLUMBIA

REPORT ON THE OIL AND GAS COMPLIANCE REVIEW

January and March 2002

Prepared by the Oil and Gas Commission, Ministry of Water, Land & Air Protection, Fisheries and Oceans Canada and the Ministry of Forests.

CONTENTS

EXECUTIVE SUMMARY 3

1.0 DEFINITION OF NON-COMPLIANCE 4

2.0 METHODOLOGY 5

3.0 REVIEW RESULTS 7

RESULTS OF TARGETED ACTIVITIES 7

Stream Crossings 8

Sewage Disposal 10

Well sites 11

Special Waste 11

Water 12

Forestry 14

Gravel 15

4.0 CONCLUSIONS AND RECOMMENDATIONS 15

5.0 ACTION PLAN FOR THE OIL AND GAS REVIEW 2001/2002 17

APPENDIX A. TEAM MEMBERS 21

APPENDIX B. SOUTH TEAM REPORT 22

APPENDIX C. MIDDLE TEAM REPORT 24

APPENDIX D. NORTH TEAM REPORT 26

105-01543/

BRITISH COLUMBIA

Report on the Oil & Gas Compliance Review January and February 2002

Prepared by Ministries of Water, Land and Air Protection, Forests and the Oil and Gas Commission

Executive Summary

Significant increases in the oil and gas activity in north-eastern British Columbia over the last few years have prompted concerns within the Ministries and agencies responsible for the regulatory legislation. These concerns are whether the oil and gas industry, with the increased activity, has been maintaining compliance with the legislation. Following discussions, in the year 2000, between the Ministry of Water, Land and Air Protection (WLAP), Oil and Gas Commission (OGC), Ministry of Forests (MOF), Land & Water British Columbia (LWBC) and the Federal Fisheries and Oceans Canada (DFO), a decision was made to conduct annual inter-agency compliance reviews.

Each of two reviews would last approximately fourteen days, both of which will occur within the first quarter of the year. The purpose of the reviews is to determine the oil and gas industry's compliance with provincial and federal legislation pertaining to environmental protection and public safety.

In this 2002 Compliance Review, inter-agency teams conducted 186 compliance review inspections and concentrated on specific activities, namely:

- Stream crossings, works in and about a stream, snow/ice fills and ice bridges
- Sewage management and disposal at campsites and drilling rigs
- Well sites, producing wells, drilling and construction of leases
- Special wastes
- Water usage by camps, drilling rigs and seismic crews
- Forestry practices of crews constructing seismic, camps, access roads, drilling leases and pipelines
- Gravel, unauthorized removal and use, Crown land trespass,

The teams consisted of representatives from the above noted ministries and agencies. Each team included a minimum of one conservation officer and one OGC inspector. The majority of operations were found to be in major compliance with requirements:

- Stream Crossings 93%
- Well Sites 96%
- Special Wastes 100%
- Forestry 96%
- Gravel 100%

Major problems were identified for two activities:

- Sewage management and disposal 62%
- Water usage by camp, rigs and seismic 56%

A course of action to respond fully to these findings is being developed. Major improvements from the previous year were noted for stream crossings (from 56% to 93% compliance with major requirements) and special wastes (from 43% to 100%). The program of interagency reviews will continue.

1.0 Definition of Non-Compliance

It is important to establish a clear distinction between Minor and Major non-compliance. "Minor" non-compliance consists of those issues that do not have an immediate or significant impact on the environment or public health and safety. They may be dealt with via instructions to the operator or through a compliance notice rather than formal enforcement actions. "Major" non-compliance consist of those issues that can have an immediate, significant impact on the environment or public health and safety and which must be dealt with immediately. Refer to *Table A* for further clarification.

Table A:

Type #1 - No Issue		**Type #2 - Issue is Minor**		**Type #3 - Issue is Major**
Site inspection evaluated compliant to regulatory requirements		Site inspection evaluated non-compliant to regulatory requirements but considered not an immediate or significant impact on the environment or public health and safety		Site inspection evaluated non-compliant to regulatory requirements but considered an immediate or significant threat to the environment or public health and safety
Make observation Comments:	Identify any risk of non-compliance	Identify trivial non-compliance:	Identify minor non-compliance:	Identify major or significant non-compliance:

-Note good work. -Note any substandard action; clarify standards.	-Make comments and flag for future inspection if the site practice observed is likely to lead to non-compliance.	-Indicate concerns; indicate no action required if problem is small enough in scope that problem could be evaluated as transitory or insignificant.	-Indicate compliance concern; provide detail on form that evaluates problem to have minor severity or impact -flag for future inspection -Problem may need assessment with senior staff for legal action or official warning.	Provide detail to clarify severity and/or impact on inspection form: **forward information to senior staff for further legal determination of alleged non-compliance and obtain consensus and direction for action assessment to resolve problem*

2.0 Methodology

The review teams were developed by a Steering Committee consisting of senior staff of the Oil and Gas Commission (Ben Mitchell-Banks, Director of the Compliance and Enforcement Branch), Ministry of Water, Land and Air Protection (Andy Ackerman, Environmental Stewardship Manager), Ministry of Forests (Lance Ollenberger, Operations Manager & Darral Alexander, Field Operations Supervisor) and the Conservation Officer Service.

The review teams had a diversity of expertise from each Ministry/Agency. Each team had a captain who was responsible for logistics, safety, scheduling and co-ordination with the Steering Committee. The captains also attended planning and review meetings of the Steering Committee. Please refer to Appendix A for a list of those involved in each team.

The teams were assigned specific areas to inspect, as follows:

South Team

- Chicken Creek
- Sikanni River
- Horseshoe Creek
- Altares
- Sukunka
- Hiding Creek
- Noel

Middle Team

- Milligan
- Peejay
- Ladyfern
- Fontas
- Velma
- Dahl
- Inga
- Buick Creek
- Stoddart
- Wonowon
- Cypress
- Graham
- Bubbles
- Jedney
- Beg
- Halfway
- Tommy Lakes

North Team

- Milo
- Sierra
- Kyklo
- Sahtaneh
- Hay River
- Prophet River
- Maxhamish Area
- Beaver River Rd
- Liard Crossing
- Mile Post 320 (Miduski Creek)
- Klua River
- Mid Winter
- North Helmet
- Clark Lake
- Thetlandoa North

3.0 Review Results

Field activities were carried out within the period January 1 to February 1, 2002. A total of 186 inspections were conducted during the review process. The review teams found the Major Non-Compliance rate to range from a high of 44% for activities related to Water to a low of 0% for Gravel and Special Wastes related issues. Minor Non-Compliance ranged from a high of 75% for Special Wastes to a low of 0% for Gravel. The review found 52% compliance with all of the requirements of the legislation pertaining to the targeted activities.

Significantly fewer inspections made in 2002 compared to 2001. The average percentage of Major Non-Compliance was reduced. Please refer to *Table B* and *Table C* for an overview of the non-compliance rates for the various targeted activities inspected for each year's review.

Results of Targeted Activities

Table B:

Compliance of Targeted Activities for 2002

Type	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
Stream Crossings	43	34	6	3	7
Sewage Disposal and/or Storage	45	7	21	17	38
Well Sites	50	35	13	2	4
Special Wastes	4	1	3	0	0
Water	16	4	5	7	44
Forestry	26	15	10	1	4
Gravel	2	2	0	0	0
Totals	**186**	**97**	**59**	**30**	**16**

Table C:

Compliance of Targeted Activities for 2001

Type	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
Stream Crossings	169	74	21	74	44
Sewage Disposal and/or Storage	68	29	17	22	32
Well Sites	152	61	87	4	3
Special Wastes	7	3	0	4	57
Water	48	22	20	6	13
Forestry	67	47	18	2	3
Gravel	29	28	1	0	0
Totals	**540**	**264**	**164**	**112**	**21**

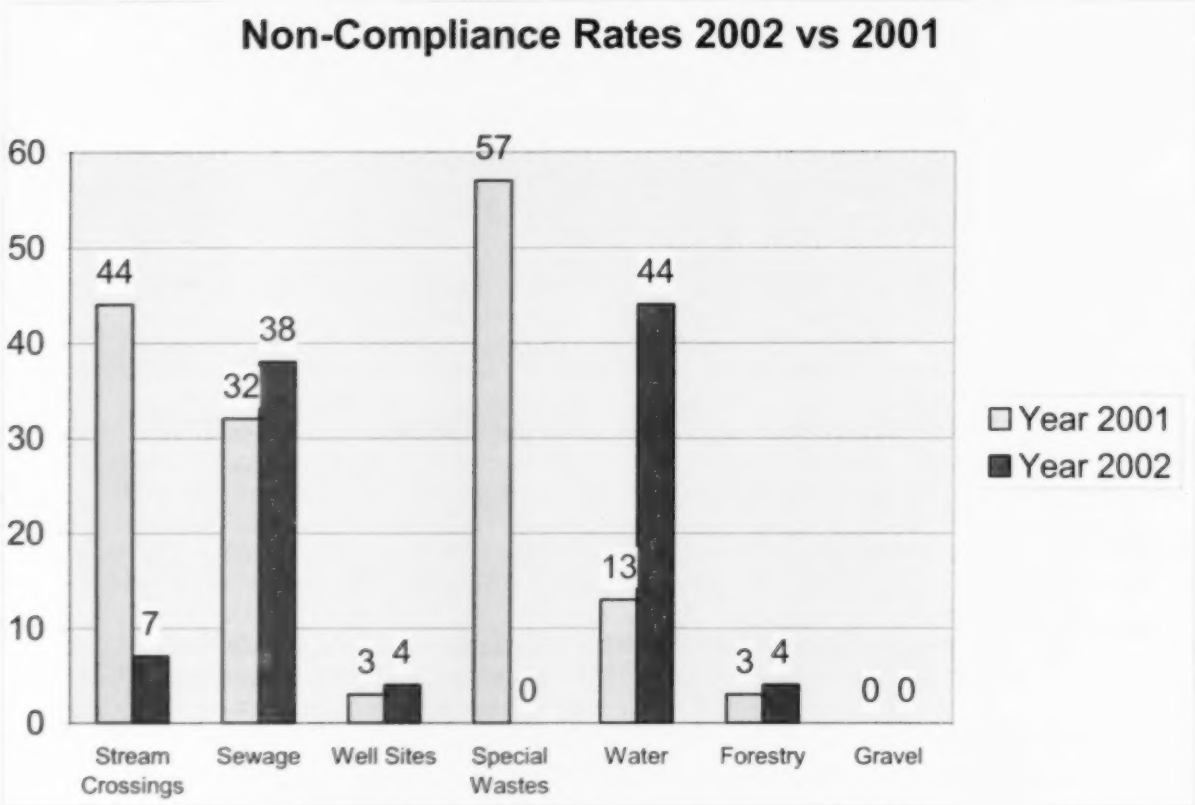

Diagram 1

There was a significant reduction in Major non-compliant rates in the Stream Crossings and Special Wastes activities. There are notable Major non-Compliant increases in Water and Sewage activities.

Stream Crossings

Conclusions: There has been a significant drop in the stream crossing non-compliance rate for 2002. Non-compliance often involves the use of mineral soils instead of clean snow for snow fill construction. The improved compliance rate is a positive development and it may be a result of a higher snow pack. Higher snow packs give construction crews material to use. Low snow packs often require the use of snowmaking equipment and clear span bridges if sufficient natural snow is unavailable for snow fill construction. Continued attention to this matter is warranted.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	11	8	3	0	0
Middle	12	10	2	0	0
North	20	15	2	3	15
Totals	**43**	**33**	**7**	**3**	**7**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	50	35	4	11	22
Middle	86	22	14	50	58
North	33	17	3	13	39
Totals	169	74	21	74	44

Recommendations:

Government:
A proactive approach to achieving compliance needs to be taken in 2003. An advisory letter should be sent to the exploring companies bringing the 2002 audit results to their attention. Their assistance should be requested to ensure their company's activities are conducted in compliance with project approval conditions. A signed-off document should be requested from the responsible company official confirming their stream crossings will be constructed and maintained in compliance with all applicable regulations.

The OGC C& E Branch should develop a risk managed and performance based audit system to inspect, administer and correct industry stream crossing construction. Resources should be focused on non-compliant areas and companies.

Ensure the wording used for stream crossing approval conditions is consistent throughout the province.

The OGC C&E Branch should work with the Ministry of Forests to ensure that the upcoming Forest and Range Practices Act training relevant to stream crossings is available to the oil and gas industry. It is anticipated this training will be available in the spring of 2003 and beyond. See http://www.gov.bc.ca/for/ for further information.

Major non-compliant stream crossings continue to be documented and referred to the Conservation Officer Service for enforcement action. Where appropriate shut down orders will be issued.

Industry:
Industry has to take responsibility and be accountable to monitor their activities and ensure their operations are in compliance with all applicable approval conditions and regulations. This would include requiring their contractors and construction personnel to be trained and aware of all regulatory requirements.

The industry must have contingency plans in place for years when low snow packs are encountered. This has been a persistent problem and alternative stream crossing methods should be applied for should insufficient snow be available for snowfalls. Such methods would include temporary clear span, Bailey and native timber bridges.

Sewage Disposal

Conclusions: There was a 6% increase in major non-compliance in 2002 compared to 2001. This is a serious concern given this issue was brought to industries attention during the 2001 audit. While conducting the audit, several companies were ticketed by the Conservation Officer Service for sewage violations. In addition, C&E staff when meeting with industry have consistently highlighted the non-compliance rate involving sewage management.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	9	1	6	2	22
Middle	12	3	5	4	33
North	24	3	10	11	46
Totals	**45**	**7**	**21**	**17**	**38**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	22	8	3	11	50
Middle	33	16	6	11	33
North	13	5	8	0	0
Totals	68	29	17	22	32

Recommendations:

Government:

A proactive approach to achieving compliance with sewage management legislation needs to be taken in 2003. An advisory letter should be sent to both the exploring and drilling companies bringing the 2002 audit results to their attention. A signed-off document should be requested from the responsible company official confirming their operations are in compliance with all applicable regulations.

The OGC C& E Branch should implement a risk managed and performance based audit system to inspect, administer and correct deficiencies identified during drilling activities. Resources to be focussed in areas where high non-compliance rates are identified.

Where a major non-compliance requires an immediate response a shutdown order on either the equipment or activity will be issued. The occurrence will then be documented and referred to the Conservation Officer Service for enforcement action. The non-compliance will form part of the company's compliance history and will be used when determining future inspection frequency.

An 85% compliance rate for sewage handling for the 2003/04 drilling season is required. The C&E Branch will be focussing on sewage management as one of its priorities for the 2003/04 season.

Consideration should also be given to requiring the use of tanks for sewage storage instead of sumps.

Industry: Industry has to be proactive, take responsibility, and be accountable to monitor their activities to ensure their operations are in compliance with sewage management approval conditions and regulations. This will include requiring contractors and construction personnel to be properly trained. Supervisors must be aware they are responsible to inspect their camps and drill rigs for compliance and take immediate action when non-compliance is detected.

Well sites

Conclusions: Drill Rigs continue to have a high compliance rate for major non-compliance issues. In addition the minor non-compliance rate showed a significant improvement over the 2001 figures.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	7	4	3	0	0
Middle	13	4	7	2	15
North	30	27	3	0	0
Totals	**50**	**35**	**13**	**2**	**4**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	41	19	19	3	7
Middle	84	27	57	0	0
North	27	15	11	1	4
Totals	152	61	87	4	3

Recommendations:

Government:
The OGC will implement a risk managed, performance based inspection system for well site inspections.

Industry: Industry must continue to place a high priority on compliance for drill and service rigs due to the health, safety and environmental hazards associated with these operations. The self-inspection program used by drilling and servicing operations must be maintained.

Special Waste

Conclusions: There were no major special waste violations identified in 2002. Violations in 2001 included failing to register drilling operations generating special waste and failing to manifest the transportation of special waste. The special wastes encountered in the 2001 audit were invert cuttings from drilling operations.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% Major Non-Compliance
South	3	1	2	0	0
Middle	1	0	1	0	0
North	0	0	0	0	0
Totals	**4**	**1**	**3**	**0**	**0**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	3	1	0	2	66
Middle	4	2	0	2	50
North	0	0	0	0	0
Totals	7	3	0	4	57

Recommendations:

Government: The Commission should take steps to acquire the capacity, authority and enforcement tools required to ensure compliance with the Waste Management Act and regulations. This will allow the OGC to take compliance and enforcement measures when violations are encountered in the field.

Industry: Industry must continue to be proactive, take responsibility, and be accountable to monitor their activities to ensure their operations are in compliance with special waste regulations. This will include requiring contractors and construction personnel to be properly trained. Supervisors must be aware they are responsible to monitor their operations for compliance and take immediate action when non-compliance is detected.

Water

Conclusions: There was a significant increase in water related non-compliance. Violations included not carrying water permits in water hauling trucks; not having valid water permits, exceeding the volume allowable under the permit and removing water from Beaver dams.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	4	2	2	0	0
Middle	3	0	2	1	33
North	9	2	1	6	67
Totals	**16**	**4**	**5**	**7**	**44**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	13	5	6	2	15
Middle	25	7	14	4	16
North	10	10	0	0	0
Totals	48	22	20	6	13

Recommendations:

Government:
A proactive approach to achieving compliance should be taken in 2003. An advisory letter should be sent to the exploring companies bringing the 2002 audit results to their attention. A signed-off document should be requested from the responsible company official confirming their drilling and construction activities will be in compliance with all applicable regulations and permit conditions.

Where water users are found to be non-compliant a shut down order may be issued, the circumstances will be documented and referred to the Conservation Officer Service for enforcement action. The non-compliance will form part of the company's compliance history and will be used when determining future inspection frequency.

The OGC, as the permit issuing authority, should acquire the enforcement tools and authorities to deal with infractions of water permits at the time of inspection. Working jointly with the Conservation Officer Service, this approach will allow for effective and efficient enforcement action in the field.

Hold a workshop for water hauling companies and prepare a pamphlet for use by every driver.

Industry:
Industry has to take responsibility, be accountable to monitor their water use activities, and ensure compliance with regulations and permit approval conditions. Companies must ensure their activities are conducted in compliance with the Water Act and all water permit conditions. This must include making sure contractors and construction personnel are appropriately trained and aware of all Water Act regulatory requirements. Supervisors must be aware and held accountable to inspect their projects for compliance and take immediate action when non-compliance is detected.

The non-compliance violations industry needs to focus on are; water haulers not carrying copies of the water permit, projects not having a valid water permit, exceeding the volume allowable under the water permit and removing water from beaver dams. The latter results in damage to wildlife that must be stopped through all available means.

Project proponents must apply for the volume of water actually required for servicing the rig, winter road construction, snow fill or ice bridge construction. Some proponents apply for the generic amount of 10,000 gallons when their needs may be far in excess of that volume. Proponents need to give direction, to their land agents about the volumes of water to be applied for.

Forestry

Conclusions: Major non-compliance of forestry issues remains low, which is encouraging.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	3	3	0	0	0
Middle	22	12	9	1	5
North	1	0	1	0	0
Totals	**26**	**15**	**10**	**1**	**4**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	7	6	0	1	14
Middle	48	31	16	1	2
North	12	10	2	0	0
Totals	67	47	18	2	3

Recommendations:

Government
Devise a strategy to raise awareness in the oil and gas industry about the implementation of new legislation such as the Forest and Range Practices Act and subsequent regulations. The strategy should include the distribution of an information letter and posting the letter on the web site. In addition C&E staff will raise the training issue with industry personnel during the upcoming season.

Industry:
Put systems in place to ensure their personnel have read, understand and comply with the approval conditions.

Stay informed about the progress of new forestry legislation and identify changes that affect their operations. Monitor the development of new regulations and schedule staff to take advantage of the Ministry of Forests training program where appropriate. Information can be viewed at the MOF web site at http://www.gov.bc.ca/for/ and select the Forest Practices Code Transition Training link.

Gravel

Conclusions: No violations identified during the audit.

2002

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	0	0	0	0	0
Middle	0	0	0	0	0
North	2	2	0	0	0
Totals	**2**	**2**	**0**	**0**	**0**

2001

Team	Total	Compliance	Minor Non-Compliance	Major Non-Compliance	% of Major Non-Compliance
South	5	5	0	0	0
Middle	20	19	1	0	0
North	4	4	0	0	0
Totals	29	28	1	0	0

Recommendations:

Government: No recommendations.

Industry: No recommendations.

4.0 Conclusions and Recommendations

In 2002 there were 186 inspections conducted versus 540 inspections in 2001. Although the sample size is smaller the team feels the audit results present an accurate picture of compliance in the industry.

Significant rates of major non-compliance were identified for the following two activities:

- Sewage management and disposal 38%
- Water usage by camp, rigs and seismic 44%

Sewage and water non-compliance was also a concern in the 2001 audit. It appears that years with low snow packs result in elevated rates of non-compliance with snow fill stream crossings.

Recommendations as a result of this report are:

4.1 Conduct another multi-agency audit during the 2003 drilling season.

4.2 Continue to develop and implement those recommendations not yet fully actioned from the 2001 audit.

4.3 Develop a proactive approach to achieving compliance be taken in 2003. An advisory letter should be sent to the exploring and developing companies bringing the 2002 audit results to their attention. Their assistance should be requested to ensure their company's activities are conducted in compliance with relevant legislation and project approval conditions. A signed-off document should be requested from the responsible company official confirming their activities will be constructed and maintained in compliance with all applicable regulations.

4.4 Oil and Gas Commission staff should continue to highlight the audit findings during upcoming inspections and urge companies to ensure their operations are in compliance by conducting self-inspection.

4.5 Develop a formal training course and certification for environmental monitors so that industry participants not having internal capacity could use environmental or compliance monitors to inspect activities and identify non-compliance issues such as stream crossings, sewage disposal, and water taking.

4.6 Inspection Agencies should continue to elevate enforcement responses to persistent offenders with actions such as shut downs and prosecutions.

4.7 Inspection Agencies have a greater presence in the northern field area where non-compliance warrants closer attention.

4.8 Prepare a Stewardship Audit with industry group for self-use by companies as part of their due diligence.

4.9 The OGC Compliance & Enforcement Branch develop a risk managed audit system to ensure appropriate use of staff resources.

4.10 Highlight to industry the training available from the Ministry of Forests prior to implementation of the new Forest & Range Practices Act and Regulations

4.11 The OGC Compliance & Enforcement Branch should develop a way to acknowledge companies that demonstrate good practices and superior compliance regime.

Action Plan for the Oil and Gas Review, 2002

ACTIONS FROM 2001 AUDIT	ACTION TO DATE	% COMPLETE
Review: There is currently a second inter-agency compliance review scheduled for January 2002. Funding will be provided by WLAP for flying and certain other expenses. The steering committee for the initial review has agreed to stay in place for the second review	Multi agency audit was completed. Participants included MOF, WALP, DFO, Environment Canada and the OGC. 186 inspections were conducted.	100%
Education: The members of the Steering Committee will be conducting presentations and workshops for both industry and government on the review in the next couple of months.		
➢ A series of presentations will be made to industry groups such as the Canadian Association of Drilling Contractors (CAODC), the Northeastern BC Producers, Canadian Association of Petroleum Producers (CAPP).	Presentations made to industry groups to discuss the audit findings.	100%
➢ An information letter will be prepared by OGC for the industry and will concentrate on the primary target areas of sewage disposal, water, and special waste management.	Information letter prepared and posted to the OGC Website, focus is Sewage, Water use, Stream Crossings and Special Waste Management.	100%
➢ Education and information booklets will be prepared using funding from WLAP and the OGC Environment Fund. We will also be consulting with CAPP to determine if they are prepared to partner in this exercise as well as to find out if industry already has information booklets or handbooks that may be appropriate	Not yet initiated	0%
Interagency Workshops: As part of the 2002 review, an inter-agency briefing session was conducted for the review teams in early December of 2001. As well, briefings will also be given to WLAP, OGC, MOF and other agency staff soon after the report is released	Interagency review completed of the draft report by WALP, OGC and MOF	100%
Review of Guidelines and Legislation: This is currently underway by government	Ongoing, Oil and Gas Waste Regulation and Forest and Range Practices Act reviewed and implemented, Other legislation currently under review or identified for review.	Not quantifiable as extent of legislative change not defined at this time.

Review forms and report formats: This is currently underway in conjunction with the planned 2002 review. The North Team report format will be used as it clearly distinguishes between minor and major compliance	Forms reviewed and adapted. Further changes to fine tune the process to take place prior to the 2003 Audit.	90%
Snowfalls and Ice Crossings: Government agencies will be preparing guidelines for both industry and government compliance officers. We will consult the DFO in this initiative. Guidelines will include concern over mineral soils, sediments and large debris in these crossings and the 2002 review will be paying particular attention to those areas identified in the 2001 review with emphasis on fish bearing streams or systems	Review completed by OGC, WALP and DFO. Information Letter produced and posted to the OGC web site. Snowfalls may contain some small amounts of fine organic matter. Fills may not contain mineral soil or large organic debris.	100%
Sewage disposal: Will be part of the inter-agency workshops	The sewage management issue was dealt with at the interagency workshop held prior to the 2002 audit. A specific strategy was developed for implementation in 2002	100%
Compliance definitions: The chart contained on page 7 will be used in future compliance inspections. It provides a consistent set of guidelines for both industry and government	Completed Chart used in the 2002, audit.	100%
Water Removal: The OGC and Water Approvals Branch to include terms in the approvals that include instructions on exactly what water sources can be used and that water haulers carry a copy of the permit in their trucks. WLAP will provide the OGC with a list of borrow pits that have been stocked with fish and will include the exact locations. The OGC will be requested to exclude these pits from future approvals	The list of stocked borrow pits has been provided and water permits will not be issued for these water sources. Permits state a copy must be carried by the water hauler **and** must be on site.	100%
ACTIONS FROM THE 2002 AUDIT		
A proactive approach to achieving compliance will be taken in 2003. An advisory letter will be sent to the exploring companies bringing the 2002 audit results to their attention. The non-compliance issues identified will be stream crossings, water usage, sewage management and special wastes. Their assistance will be requested to ensure their company's activities are conducted in compliance with project approval	Advisory letter prepared and being distributed to exploring and producing companies requesting they commit to compliance by way of signoff of the document.	90%

conditions. A signed-off document will be requested from the responsible company official confirming their stream crossings will be constructed and maintained in compliance with all applicable regulations. Water usage and sewage management activities also in compliance.		
The OGC C& E Branch will develop a risk managed and performance based audit system to inspect, administer and correct industry construction and development activities. Resources will be focused on non-compliant areas.	Work is currently underway in the development of these risk managed/performanced based inspection and regulatory models. Software will be utilized to manage the larger databases for pipelines and facilities and wells.	5%
The OGC C&E Branch will work with the Ministry of Forests to ensure that the upcoming Forest and Range Practices Act training relevant to stream crossings is available to the oil and gas industry. It is anticipated this training will be available in the spring of 2003 and beyond. See http://www.gov.bc.ca/for/ for further information.	The OGC is represented on the MOF Standing Training Committee. The Committee is now aware of the need to provide training not only to the forestry sector but also to the oil and gas industry. Modules are currently under development with the first training scheduled for this spring.	20%
Industry has to take responsibility and be accountable to monitor their activities and ensure their operations are in compliance with all applicable approval conditions and regulations. This would include making sure contractors and construction personnel are appropriately trained and aware of all regulatory requirements. Companies and their Supervisors must be aware they are responsible to inspect their own projects for compliance and take immediate action when non-compliance is detected.	The Oil and Gas Commission C&E Branch will reinforce to industry the primary responsibility to monitor operations and take action when non-compliance is found is theirs and not the regulatory agencies. Due diligence will be one of the topics included in the MOF Forest and Range Practices Act and Regulations training.	15%
Results based rewards: The OGC will be issuing letters to companies that demonstrated good practices commending them for their superior compliance rates. In the future, as the industry moves to a results based regime,	Not yet initiated	0%

consideration may be given to these companies resulting in streamlined approval processes and reduced intervals of inspection. There will be a greater focus given to those companies that have demonstrated poor compliance practices.		
Special Waste: • There are currently investigations underway as a result of the 2001 review. The 2002 review will continue to give special waste a high priority. • The OGC will carry out a project that will create a database for sites where special wastes resulting from drilling operations (invert cuttings) are stored. The database will contain information on those sites created prior to 1996. In that year inverts became the permitting responsibility of WLAP. The sites will be evaluated to ensure they are not a threat to the environment, public health or safety. There will also be an increased sharing of information between agencies pertaining to the transportation and disposal of special waste	• The 2002 audit found no compliance issues around special waste. • Information is currently being gathered to put a proposal before the Science and Community Environmental Knowledge fund. This years fund priorities are; health and safety, environment and education, engineering and technology ecosystem integrity and cumulative impact management	75%
A review is also underway to classify advanced drilling muds and their suitability for use in BC. This review will also look at the procedures for use, storage and disposal of these drilling wastes	Review ongoing, advanced muds will likely be included in a section of Guide 50, which is currently under review. Target is 2005.	
Increase in compliance staff: The OGC current service plan shows increased compliance staff by 40-50% in the next three years to enable them to effectively meet the expected demands of an expanding industry	The Branch has transferred one inspector to Kamloops, is staffing one additional pipelines inspector in Fort St John, 4 Enforcement staff in Fort St John, and two additional inspectors in Fort Nelson.	
One-window delivery of compliance and enforcement: There is an inter-agency and industry group currently examining this initiative	OGC continues to work toward a one-window model. The C&E Branch estimate this initiative will be completed by 2005	60%

Key contacts for this report are:

Andy Ackerman, Manager Environmental Stewardship Division, 250-787-3426
Ben Mitchell-Banks, Director Compliance and Enforcement Branch, 250-261-5767
Keith Rande, Senior Conservation Officer, 250-787-3394

APPENDIX A. TEAM MEMBERS

South Team

- Bruce Cazes, OGC Manager of Exploration & Development
- Cor de Boon, WLAP Conservation Officer
- Chris Wagner, OGC Pipeline Inspector
- Pat Fraser, Environment Canada
- Rhenie Lalonde, West Moberly First Nations, Land-Use Referral Technician

Middle Team

- Dean Velkjar, WLAP Conservation Officer
- Steve Hunsberger, WLAP Pollution Prevention
- Harry Offizer, MOF
- Rich Elson, DFO

North Team

- Jack Cann, OGC Ft. Nelson Operations Manager
- Cameron Eggleston, WLAP Pollution Prevention
- Brent Crack, WLAP Conservation Officer
- Les Glenn, OGC Operations Inspector
- Shawn Brinsky, WLAP Conservation Officer, replaced Brent Crack on the last day.

APPENDIX B. SOUTH TEAM REPORT

South Team – January report

Overview
The South Team audited Oil And Gas activities in an area west of the Alaska highway from the Prophet river south to the Peace River as well as the activity areas south of the Peace. Participants were from the DFO, COS, OGC, as well on the north side of the Peace a representative from MOF (FSJ office) and on the south side an observer from the West Moberly First Nation.

A total of 28 inspections were made in the following areas: Chicken Creek, Sikanni River, Horseshoe Creek, Altares, Sukunka, Hiding Creek and Noel. Inspection sites were all ground accessible.

The 28 inspections covered seismic, drilling, completion and reclamation operations. Problems with the sites were:
Sewage:
- overflowing tanks
- Sump in sandy soils
- lines not reaching pit
- sump fencing either down or loose

Creek/river crossings:
- no permits
- dirt/debris in the crossing material

Special wastes:
- no or improper manifesting

Generally sites that had non-compliance concerns were immediately dealt with at the site. Concerns expressed to the company representatives were addressed immediately with no remedial action taking more than 24 hours to complete. Good construction practices were in evidence through out the audit.

Audit Inspections			
Inspection	Type	Infraction	Observations
1	Camp <50 persons	Minor	Wellsite sewage tank overflowing, use discontinued
2	Snowfills		Manmade snow – good
3	Camp <50 persons	Major	Sewage sump in sand – replace with tank
4	Bridge crossing		Good
5	Water Source		Good
6	Special waste		No waste generator number
7	Wellsite	Minor	Rig released cleanup not completed Sewage tanks left
8	Wellsite	Minor	Water permit not onsite – faxed to site
9	Camp <50 person		Fuel tank bermed w/snow good

10	Water use		Good
11	Wellsite		Completing well, brush disposal not finished
12	Special waste		Frac oil (used) no BCG# on manifest
13a	Wellsite		Good, Water well at site, special wastes manifested
13b	Camp <50	Minor	Sewage sump fencing loose
14	Remote sump site		Good
15	Special waste		Good, properly store and manifested
16	Ice bridge		Good
17	Snow fill	Minor	Vegetation dirt and duff material in fill
18	Water permit	Minor	No permit on site – faxed to site
19	Camp <50	Minor	Broken pipes greywater and sewage pit
20	Wellsite	Minor	Sewage pipe off shack – fixed
21	Native timber bridge		Good
22	Reclamation	Major	Water crossings not permitted by OGC
23	Bridge (temporary steel)		Good
24	Bridge wood		Good
25	Bridge (temporary steel)		Good
26	Stream crossing		Good – log bundles and clean snow
27	Snowfill – seismic	Minor	Slight soil and debris in fill
28	Ice bridge – seismic		Good

APPENDIX C. MIDDLE TEAM REPORT

MIDDLE TEAM – JANUARY REPORT

Over view

In January and February 2002 an audit of oil and gas activities north of Fort St John was conducted by the middle audit team. Team representatives included staff from the OGC, WLAP's Conservation Officer Service, MOF, WLAP's Pollution Prevention and DFO.

Over the course of one week (February 4 to 8) 36 inspections were performed over the following areas: Milligan, PJ, Ladyfern, Fontas, Velma, Dahl, Inga, Buick Creek, Stoddart, Wonowon, Cypress, Graham, Bubbles, Jedney, Beg, Halfway, and Tommy Lakes. Those individual inspections are available upon request, and are summarized below.

Industry activity was identified as lower than last year, and possibly less than average. More snow was seen to be beneficial to the construction of stream crossings. The same types of activities the audit sought out last year were targeted this year. For example, stream crossings (temporary and permanent), well sites (active drilling, production and other), industrial campsites, and waste handling. It must be pointed out that one-half of the team did not complete, or submit, any inspection forms for the period, in spite of active participation. Lastly, there were only four inspections which revealed issues of a major nature. They were the only issues viewed that were deemed to have an immediate, or significant impact on the environment or public health and safety. In the last two cases an H2S reading was taken at 50 ppm in one of the wellsite buildings which displayed no H2S safety sign.

	Type of Inspection	Compliance Rating	Comments
1	Camp >50 persons	Minor	Spills at fuelling area/refuse mishandling
2	Camp <50 persons	Minor	Poor containment of special wastes
3	Stream crossing	OK	No issues
4	Water Use	Major	Litter at withdrawal site
5	Camp <50 persons	Minor	Special wastes stored improperly
6	Stream crossing	OK	
7	Stream crossing	OK	
8	Wellsite Audit	OK	
9	Wellsite Audit	Minor	Litter and drilling wastes left onsite
10	Wellsite Audit –Service Rig	Minor	Surface discharges of waste water
11	Camp <50 persons	Major	Disconnected pipes/ surface discharge
12	Wellsite Audit-Drilling Rig	Minor	Advised to obtain water use approval
13	Wellsite Audit	OK	Valves not chained
14	Camp <50	OK	
15	Wellsite Audit-Drilling Rig	Minor	Litter onsite/burning to do/Remote Sump full
16	Camp <50 persons	Major	Disconnected pipes/surface discharge
17	Stream crossing	Minor	Mineral soil in fill
18	Camp <50 persons	OK	
19	Wellsite Audit	Minor	Fuelling area spills/poor special waste storage
20	Wellsite Audit	OK	
21	Water Use	Minor	Use water without approval/litter at site
22	Stream crossing	OK	
23	Temporary Bridge	OK	
24	Temporary Bridge	Minor	Abutment encroachment/erosion control

25	Wellsite Audit-Drilling Rig	Minor	Waste discharge from trailer
26	Ice bridge	OK	
27	Stream crossing	OK	
28	Stream crossing	OK	
29	Water use	Minor	Use water without approval
30	Stream crossing	OK	
31	Stream crossing	OK	
32	Wellsite Audit	Minor	Construction garbage onsite
33	Camp <50 persons	OK	
34	Wellsite Audit-Drilling rig	OK	
35	Special Waste Site	Minor	No signs/security etc
36	Wellsite Audit-producing	Major	No safety signs/ hi H2S area
37	Wellsite Audit-producing	Major	No safety signs/ hi H2S area

APPENDIX D. NORTH TEAM REPORT

NORTH TEAM OIL AND GAS AUDIT, WINTER 2001/2002:

The following report provides a general description of audit activities, pictures examples of significant problems, and a table listing inspection sites with associated comments. A summary and recommendation page is also provided.

Overview:

The 2002 Oil and Gas Audit, for the Fort Nelson area, was conducted in the last week of January. Five team members took part: Jack Cann, OGC Ft. Nelson Operations Manager, Cameron Eggleston, Environment Protection, Brent Crack, Ft. Nelson Conservation Services, and Les Glenn, OGC operations inspector based in Fort St. John. On the last day, Shawn Brinky, CO, replaced Brent Crack.

The first three days teams were split between helicopter and ground travel. Day 4 and day 5, both teams used truck travel. Ground inspections took place in Milo, Sierra, Kyklo, Sahtaneh, Hay River, and Prophet River. Air inspection covered Milo, Maxhamish Area, Beaver River Rd and Liard Crossing, Mile Post 320 (Miduski Creek) , Klua River, Mid Winter and North Helmet, Hay River, Clark Lake, and Theaandoa North.

Different from the 2001 O&G Audit, helicopter time involved few landing—maximum airtime was considered more productive. Several significant problems by air were identified—a rig flare stack too close to lease tree line, and a visually dirty creek crossing—these were followed-up by ground inspection. Also different from the 2001 O&G Audit, helicopter time placed emphasis on a systematic coverage of large seismic programs, inspection impossible to achieve with truck use. Sixty five (65) inspections were made over a five-day period. Of these, nineteen (19) were assessed as significant, fifteen (15) were assessed minor, and the remainder was identified as no problems noted.

Significant problems trended as sewage management and water use issues, but not exclusively: an ice bridge that required erosion control, and a single observation of a dirt filled creek crossing were also classified "significant".

Nine legal enforcement actions were made or are pending: these concern concerning authorised water use from Beaver Ponds (inspection #3-5, #15); unauthorised discharge of business waste to ground (#7, #10, and #19). Notably, inspection #3-5 involve water use from Beaver Ponds on a Forestry Road and preliminary investigation suggests no water license exists; as well, water obtained from Beaver Ponds appears common practice: this is a violation under the Wildlife Act.

Summary and Recommendations:

Due to the extensive physical distances involved, plus varied start-finish times of seismic, drilling

and pipeline programs, north team's fifteen hours of helicopter time plus seven truck-days of inspections has provided limited audit coverage for the north portion of the Omineca-Peace sub region. What was done, of course, was not merger: but, with respect to the 2001/2002 winter season, and the full range of Oil and Gas activities proposed, the audit cross-section of inspections, is only a cursory cut.

Some general conclusion and recommendation for improvement can be made: We conclude, based on a number of interviews with water truck drivers, that authorization certificates (required by OGC to be kept in truck cab or readily available at the local field base) are unknown to them. Indeed, the discovery of a number of source water holes found in small Beaver Ponds is disturbing. Continued effort by Ft. Nelson OGC and CO service, and repeated audit will change this established trend. Secondly, sewage management from Rig trailers is considered typically poor. The majority of Rig trailers observed had not made minimal effort to provide piping between trailer and trench. Health guidelines between trailer and trench require two pipe lengths, however, for the many remote Rigs we observed by air it is evident this cannot be complied with without a larger purchase of lease area. We assume, because of remote location and the short duration of site occupation--both placed in a background of infrequent regulatory inspection--lack of direction by industry to facilitate minimal trailer-to-trench pipe construction will continue next year. However, continued effort by Ft. Nelson OGC and CO service, and repeated audit action providing warning, censure, and ticket, will, we believe, change this established trend.

Thirdly, we conclude airtime is needed for effective inspections of seismic programs. These programs are large, numerous, variable in implementation, and indeed, remote; they need considerable preparation, even with airtime, in order to properly assess and confirm operational compliance. Future audits, we recommend, will need resources for airtime.

In retrospect, we can say preparation investment has direct productive gain in an audit. That is to say, investing preparation time in review of OGC program proposals, plus the development of appropriate mapping, as well as making effort to discuss historical compliance concerns with appropriate experienced staff, should not be avoided.

Further, based on experience, it is clear that an inventory of active drilling (and other programs) together with field contact names, cell numbers, and fax numbers (they all exist), will enable effective real time communication with program reps in order to deal with issue and concerns expediently.

In summary, we believe that well prepared team members with good communications channels to people at their target inspections is the best recommendation we can offer.

Table listing audit inspections:

#	lat	long	Date	Inspection	Non-Compliance	Comment
1	59-43	121-09	28/Jan	Rig-Trinada#11	Significant	Rig OK; Sewage on ground from trailers: noted from helicopter; OGC to follow-up and identify poor practice and that inspection observation have been referred to Ft. Nelson Health Officer.
2	58-54	121-49	1/Feb	Water Use	Significant	Forestry Rd.; no water licence, referred to Water Branch
3	58-52	122-07	1/Feb	Water Use	Significant	Forestry Rd.; no water licence, source is Beaver Pond; pictures taken: referred to Water Branch
4	58-54	121-41	1/Feb	Water Use	Significant	Forestry Rd.; no water licence, source is Beaver Pond; pictures taken: referred to Water Branch
5	58-55	121-33	1/Feb	Water Use	Significant	Forestry Rd.; no water licence, source is Beaver Pond; pictures taken: referred to Water Branch
6	58-55	121-29	1/Feb	Snow Bridge	Significant	Kotcho Lake Forestry Rd.--brush pushed into Creek on one side of bridge; pictures taken; referred to Forestry
7	58-54	123-19	30/Jan	Snow Bridge	Significant	heavy contamination with dirt and wood; warning tickets issued; instructions given to reclamation area--hand shovel work likely necessary
8	58-47	121-10	31/Jan	Rig Moving Out	Significant	anti-freeze and diesel spill on location; sewer pipe not connected resulting in discharge to ground. Ticket issued for unauthorized discharge of business waste: Health officer advised.
9	58-40	123-01	29/Jan	Rig-Precision 253	Significant	water permit not valid; sewer pipes missing--verbal discussion by Conservation Services to immediately correct; Health officer advised
10	58-41	123-01	1/Jan	Rig - 01	Significant	water truck leaking oil (several gals per day) told to take out of service by OGC; sewage and antifreeze spillage identified: verbal discussion by Conservation Services to remedy immediately. Health Officer advised
11	58-42	121-50	30/Jan	Lease Site	Significant	lease site reclamation work unfinished; well head not sealed off properly: OGC to follow-up.
12	58-48	122-33	1/Feb	Nelson R. Ice Bridge	Significant	erosion control needed on east bank; pictures taken; referred to Forestry
13	58-38	120-06	31/Jan	Rig-Precision 641	Significant	spacing of Rig equipment poor; no sewage pipes observed connecting trailers and discharge trench; OGC to follow-up; Health Officer advised.
14	58-38	120-06	31/Jan	Rig-Arrow #6	Significant	Rig audit by air OK; sewage spillage from trailers observed is more than minor; OGC to follow-up
15	58-33	128-01	31/Jan	Water Use	Significant	no water use authority; water source Beaver Pond; Conservation Service to follow-up: ticket recommended by OGC and Env. Protection

16	58-34	122-08	29/Jan	Precision 633E	Significant	Rig audit by air OK; sewage spillage from trailers assess more than minor as no pipes from trailer to trench were evident; OGC to follow-up
17	Desan Lk Rd.	Km 186.4	28/Jan	Camp Inspection	Significant	Air inspection: overflow of sewage lagoon noted last audit at same point. Appears repeated based on observation of depression in snow at this point: ticket issued last year--a repeat problem suggest order needed to upgrade lagoon; camp over >100 persons; permit needed under Waste Management Act. Follow-up needed, Health advised; CO Service Advised; Env. Protection advised.
18	58-35	120-05	28/Jan	Rig-Precision 173TD	Significant	Sundry concern at Rig: building spacing too tight, fuel tank to big, no evident garbage container; ground spill of sewage evident from air, therefore presumed significant. OGC to follow-up; Health officer advised.
19	Hay	River	31/Jan	Rig 110-Husky	Significant	significant sewage discharge to ground; no pipe between trench and trailers; trailers over 10' from trench; pictures taken; CO services advise. Health Officer advised.
20	58-22	120-09	28/Jan	Rig- Poncho 109	Minor	Problems designated as Minor as follow-up ground inspection was made Jan-31: no pipe to trench in place but limited spillage-directed to resolve: Full audit of Rig made by OGC noting sundry concerns with resolution directions issued.
21	59-39	120-03	28/Jan	Rig-Champion #28	Minor	Rig audit by air inspection OK; no sewage pipes from trailers to trench, limited spillage evident--assessed minor: Health Officer advised.
22	59-52	121-01	28/Jan	Ensign 21	Minor	Rig OK; Possible sewage from trailers: difficult to assess from air, problem may be minor; OGC to follow-up and identify standard practice and that inspection observation have been referred to Ft. Nelson Health Officer.
23	58-44	121-49	30-Jan	Jade # 15	Minor	Rig site OK; minor sewage issue with pipes to trench, instruction issued to fix problem; Health officer advised.
24	58-44	120-59	31-Jan	Ice Bridge	Minor	some dirt on ice; normal practice to remove at closure
25	59-59	123-11	29/Jan	Rig	Minor	some sewage spillage noted from air inspection; hard to assess volume, does not appear extensive; Heath Officer advised; OGC to identify owner
26	59-59	123-11	29/Jan	Rig - Akita 55	Minor	some spillage noted near pipe rack; some sewage on ground noted; flare box not hooked up; OGC to follow-up
27	59-51	123-12	29/Jan	Lease Site Prep.	Minor	air inspection: concern identified that clearing is using some merchantable timber; referred to Forestry; unable to land and investigate due to limited daylight flight time.

28	59-57	123-07	29/Jan	Service Rig on Lease	Minor	air inspection: Rig site OK; sewage discharge noted on ground from 2 trailers; OGC to follow-up; observation referred to local Health Officer.
29	58-44	120-58	1/Jan	Rig	Minor	direction given to re-locate incinerator and connect load line to flare tank
30	58-33	123-03	Jan-29	Water Use	Minor	small amount of litter on ice
31	58-33	123-03	28/Jan	Rig-Apache	Minor	Rig audit ok; minor sewage leak observed, clamp needed on pipe
32	58-34	123-04	28/Jan	Steel Span Bridge	Minor	tires found on ice; some dirt residue on ice; OCG directed action to remediate: immediate resolution offered by bridge contractor, warning ticket not considered necessary
33	58-33	123-03	29/Jan	Rig- ensign 56	Minor	Sewer Piping required; limited spill to ground; verbal discussion with manager by OGC identifying poor practice; Health officer advised
34	59-28	121-49	28/Jan	Rig Camp	Minor	site has fuel tank; recommended practise to be bermed
35	58-37	120-04	28-Jan	Rig-H+R #21	ok	no problems noted in air inspection
36	59-40	120-37	28-Jan	Ice Bridge	ok	Petitot River, no problem noted from helicopter
37	59-40	120-37	28/Jan	Ice Bridge	ok	good construction: no problem noted from helicopter
38	59-49	120-49	28-Jan	Snow Bridge	ok	no problem noted from air inspection
39	59-28	121-49	28-Jan	Water Use	ok	water use in river, access by bridge
40	59-27	121-51	28/Jan	Rig - 01	ok	Rig OK; good practices noted with sewage from trailers
41	59-27	121-50	28-Jan	Ensign 59	ok	Well site audit OK, no problems noted from air
42	59-26	121-50	28/Jan	Lease Site	ok	Site has been prepared for arrival of Rig in near future; no problem noted
43	59-21	121-49	28/Jan	H & R - Rig 28	ok	Well site audit OK, no problems noted from air: sewage OK
44	58-54	121-46	01-Feb	Pipeline Road X	ok	1 metre of snow over pipe, capped with Ice: good
45	58-33	122-02	01-Feb	Snow Bridge	ok	2 metre creek; no problem noted
46	58-51	122-15	01-Feb	Snow Bridge	ok	Forestry Rd; no problem noted
47	58-54	121-46	01-Feb	Pipeline Road X	ok	1 metre of snow over pipe, capped with Ice: good
48	58-40	122-45	1/Jan	Pipeline Road X	ok	OGC to do follow-up to ensure ice bridge removed when pipeline done
49	58-37	122-49	28-Jan	Ice Bridge	ok	no problem noted
50	58-38	122-50	28-Jan	Water Use	ok	no problem noted
51	58-36	122-58	28-Jan	Snow Bridge	ok	surface clean
52	58-38	123-05	29-Jan	Snow Bridge	ok	no problem noted
53	58-38	123-08	29-Jan	Rig Lease	ok	brush piles need removal–sundry concern
54	58-44	120-58	01-Feb	Rig	ok	no problem noted
55	58-47	121-10	31-Jan	Drilling Rig	ok	no problem noted
56	59-57	124-12	29-Jan	Pipeline Road X	ok	air inspection, no problem noted
57	58-42	123-00	29/Jan	Snow Bridge seismic)	ok	good availability of snow; bridge ok; also confirmed 60m set back from river as program authorization requires
58	58-34	122-10	29-Jan	Rig_Kinnel #2	ok	Rig audit by air OK
59	58-39	121-52	30/Jan	Large Camp	ok	air inspection: no problem noted; probable over 100 person camp

60	59-03	121-20	30/Jan	Gravel Pit	ok	reference of site referred to Lands Department for cross check against use permit: pictures taken
61	59-55	123-50	29-Jan	Liard R. Ice Bridge	ok	no problem noted by air: landings OK
62	58-22	120-04	28/Jan	Camp Inspection	ok	5 trailer close to Precision 173TD; air inspection, no problem noted
63	Milo	Milo	29/Jan	Snow Bridges (seismic)	ok	Milo 2001-01 3D program: air inspection, no problem noted.
64	58-40	122-11	29-Jan	Rig-Ensign#31	ok	Rig audit ok; sewage OK
65	59-31	120-44	28/Jan	Gravel Pit	ok	assume ok; air inspection: site activity referred to Lands Branch for appropriate follow-up if necessary.